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TITLE	How Many Children in District 4J are Receiving Medication for "Hyperactivity"?
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ABSTRACT

Reported is a study on the number of elementary grade children in the Eugene, Oregon, school district taking medication for hyperactivity, the process of identification of these children, and the extent and kind of prescription drugs used. Each of 15 elementary school nurses was contacted and information from biannual health forms was compiled. Reported results indicated that 145 children were receiving medication (of which 81% were male), that most children received Ritalin, that many children had been receiving medication for over 2 years, and that three doctors accounted for most of the prescriptions. It is concluded that the percentage of children identified as hyperkinectic in the Eugene school district is comparable to other empirically demonstrated percentages. (DB)

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Research, Development and Evaluation
School District 4J
200 North Monroe
Eugene, Oregon 97402
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Introduction

Several District staff have requested the Evaluation Department to look at prescription drug usage among elementary children. These staff were worried that too many children were receiving medication for hyperactivity. A concern with medication for hyperactivity has been expressed in numerous books and articles nationally. Because of these concerns, the Evaluation Department initiated a small study of limited scope to look at the kind and frequency of medication for hyperactivity prescribed for school district children. The general purpose of this study was to find out how many children were taking particular medications and to lay the plans for a more extensive study, if such a study were considered necessary. This study did not attempt to determine whether too many children were receiving medication for hyperactivity.

More specifically, the purposes of the study were to: determine the nature, amount, and quality of information on hyperactive children available through the schools; find the actual number of children receiving medication; clarify the process through which they were identified; identify the extent and kind of prescription drugs used; and study the relevant, unique characteristics of these children. Retrospectively, a further purpose of the study was the identification of problems and limitations in such a study, and their implications for future investigations and for the role of schools with hyperactive children.

Existing Information

Twice a year, the school nurse and/or health clerk fills out a Student Health Survey form for each student. The form is used to record routine tests, immunizations, exams and known health problems. Item 19 on the form is called Neurological, and it has four answer categories. If category 1 is filled in, the child is recorded as having hyperkinesis, or "hyperactivity." By this process, the Health Services Department has available to it a list of students identified as hyperkinetic.

Last fall (by November 24, 1975), the forms were sent to the Oregon Total Information System (OTIS). OTIS provided the Health Services Department with a list of names dated December 10, 1975 of those students who had category 1 of Item 19 checked. OTIS created a second printout dated December 30, 1976 showing by school what percentage of the student population had category 1 checked. Two unreconcilable discrepancies existed between the two printouts about the total number of students shown. The printout of December 10, 1975 contained 114 names.

The printout of December 30, 1975 contained the names of 35 junior high and 7 senior high school students, but these students were not included and verified within this study.

Working through the District's Health Services Department, an interviewer contacted each of the 15 elementary school nurses and reviewed data on each listed student. A student information sheet was filled out for each student, stating the name of the medication taken by the child, the dosage level, the length of time the drug has been taken, the sex and grade of the child, and the name of the physician. Wherever possible, school health records were reviewed to confirm the nurses' comments. School records, however, are often brief, containing only the physician's name and name of the medication, and corroboration of some data was not possible. Neither physicians nor parents were contacted.

Results

1. Each of the 15 elementary school nurses contacted stated that Item 19 on a child's Student Health Survey form was checked in category 1 if the child had been diagnosed by a physician as hyperactive. Three nurses said that the category may also be marked if the child had come to the attention of the staff as exhibiting hyperactive behaviors. However, only two of the students marked hyperactive had never taken any medication. Thus, from the standpoint of District records, if a child receives medication for hyperactivity, the child is presumed to be hyperactive.

2. Five names were incorrectly placed on the list of December 10, 1975. For example, three of the names were names of other children in the same family. Thirty-nine names of hyperactive children were omitted from the list. Some students came to the attention of school nurses after the Student Health Survey forms were filled out, but other reasons for omissions are not known.

   Out of a total January, 1975 elementary school population of 10,060, 145 children were identified as hyperkinetic, approximately 1.44 of the total population. The proportion of hyperkinetic children varies by school. The range was .4% to 4.7%, but the mean average was only 1.5%.

   Kroger and Safer (1974) using our method of interviewing school nurses by name, found 1.73% of the children in 108 elementary schools in Baltimore County, Maryland to be receiving medication for hyperactivity. This finding is very similar to the 1.4% found in this study. This figure is lower than that found by other researchers, 2.0% to 5.0% (Miller, Palkes, and Stewart, 1973; and Sprague and Sleator, 1972).

3. Table 1, on the following page, shows the age and sex distribution of the students in this study. The ratio of boys to girls was approximately 5:1. This ratio is similar to that found by other researchers (Cantwell, 1975; Miller, Palkes, and Stewart, 1973; Stewart, Pitts, Craig and Dieruf, 1966; and Wender, 1971).

Most of the hyperkinetic children were in the second, third and fourth grades. Approximately half were in K-3 and half in 4-6, and a small percentage, 3.0%, were in educably mentally retarded (EMR) classes.

Table 1

Distribution by Grade and Sex of Students

Grade	Male	Female	
Kindergarten	2	0	2
1	9	4	13
2	26	3	29
3	23	2	25
4	25	6	31
5	12	5	17
6	18	2	20
EMR	3	2	5
TOTAL	118 (81%)	24 (16%)	145

4. Few of the children identified were in special classes or received treatments other than medication: 14 have been or are currently in special classes for the emotionally handicapped, 5 are in an EMR class, 2 had been at the Easter Seal School. Seven were presently using behavior modification techniques and five were currently using Dr. Feingold's additive-free diet (Feingold, 1974).

5. Table 2 presents finding on the type of medication taken by 138 children. Two children in the sample of 145 had never taken medication, and five were being evaluated for possible hyperkinesis. Thirty were no longer taking drugs; 99 were currently taking medication. The status of nine could not be determined. Eighty percent of all those children who have taken or who are currently taking medication received Ritalin.

Table 2

Use of Drug --Percentage of Total 138 Students

Drug	Currently taking (1/76)	No longer taking	Present status uncertain
Ritalin (methylphenidote)	93 (67.3%)	26 (18.8%)	7 (05.0%)
Cylert (Pemoline) a.m. dose only 3.7 mg.	4 (2.8%)	2 (1.4%)	---
Dexedrine (Dextroamphetamine)	1 (00.7%)	2 (1.4%)	2 (1.4%)
Ritalin and Cylert (a.m. only)	1 (00.7%)	---	---
TOTAL	99 (71.7%)	30 (21.7%)	9 (06.5%) N=138

6. Table 3 shows dosage level and administration of ritalin as identified in 78 cases.

Table 3

Dosage and Administration

Dosage Level and Timing	Number Taking	% Taking
5 mg. a.m. and noon	8	10.2%
10 mg. a.m. only	7	8.9%
10 mg. a.m. and 5 mg. noon	2	2.5%
10 mg. a.m. and noon	46	58.9%
20 mg. a.m.	1	1.4%
20 mg. a.m. and 10 mg. noon	6	7.6%
20 mg. a.m. and noon	8	10.2%
TOTAL	78	99.7%*

*Rounding error

7. Data on the length of time children had been receiving hyperactive medication was not generally recorded in health records. Table 4 below presents mostly subjective estimates of school nurses for 53 children or 36% of the group looked at.

Table 4

Duration of Use of Drug

Length of Time	Number of Children	Percent
1 month	3	5.6%
2 months	1	1.8%
3 months	1	1.8%
1 year	9	16.9%
2 years	16	30.1%
3 years	12	22.6%
4 years	6	11.3%
5 years	2	3.7%
6 years	3	5.6%
TOTAL	53	99.4%

8. Wherever possible, the name of the physician associated with the case was recorded. Table 5 shows a list of physicians identified by letter and the number of their patients in the group studied. Sometimes two doctors were listed in the records, and in these cases, .5 of the child was assigned to each doctor. Table 5 shows that the top five doctors accounted for 50.75% of the total sample. It was not possible to identify the doctors of ten of the children. Twenty-three of the 37 doctors had one or two patients only. These data show that a small group of doctors prescribe medication for hyperactivity more frequently than do most other doctors.

Table 5

Cumulative Frequency Distribution of How Many Patients a Particular Doctor Has

Doctor	Patients	Cumulative Frequency Distribution Percentage
A	29.0	21.48
B	13.0	31.11
C	12.0	40.00
D	7.5	45.56
E	7.0	50.75
F	5.0	54.45
G	5.0	58.15
H	4.5	61.48
I	4.0	64.44
J	4.0	67.40
K	4.0	70.36
L	4.0	73.35
M	3.0	75.57
N	2.5	77.42
O	2.0	78.90
P	2.0	80.38
Q	2.0	81.86
R	2.0	83.34
S	2.0	84.82
T	2.0	86.30
U	2.0	87.79
V	2.0	89.27
W	1.5	90.38
X	1.0	91.12
Y	1.0	91.86
Z	1.0	92.60
AA	1.0	93.34
BB	1.0	94.08
CC	1.0	94.82
DD	1.0	95.56
EE	1.0	96.30
FF	1.0	97.04
GG	1.0	97.78
HH	1.0	98.52
II	1.0	99.26
JJ	.5	99.63
KK	.5	100.00
	135.0	

Doctor unknown on 10 cases.

9. One of the circumstances generating a staff member's comment to the Evaluation Department was looked at. The classroom observed by the staff member had a special program within it and all program staff said that the program attracted a much higher proportion of children receiving medication for hyperactivity than regular school classrooms.

Limitations of Study

1. Since only school personnel and school records were reviewed, it is possible that there are hyperactive children in the schools of whom the school nurses are not aware. There may be hyperactive children receiving medication at home without the parents having notified the school.

2. Due to the preliminary nature of the study and its limited purpose, numerous topics were not studied, and the above data are not integrated into a comprehensive description of hyperactivity medication and elementary students. Topics not studied include fuller descriptions of the children receiving medication, e.g., their socio-economic status, intelligence quotient, and geographical area of residence. Also not studied are the children's pre- and post-academic performance, pre- or post-school behavior toward peers and teachers, the number of hyperkinetic children repeating grades, the original reasons for referral, and the process of diagnosis and the action of parents, school and physician in the decision to identify a child as hyperactive and place the child upon medication.

   However, should such a more extensive study be conducted, in addition to the topics cited in Point 2, it should also study the effects of long-term drug usage upon students, given the subjective estimate of school nurses that most students had been taking the medication two to three years. This is an area sorely lacking in research (Bendix, 1973; Eisenberg, 1971; Sleator, von Neuman and Sprague, 1974; Solomons, 1973; Sroufe and Stewart, 1973).

Conclusion

The percentage of children identified as hyperkinetic in the Eugene District is comparable to the few other empirically-demonstrated percentages. A more extensive study does not seem warranted at this stage.

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